

ABERRANT OVIPOSITION BY THE CADDISFLY *TRIAENODES TARDUS* MILNE (TRICHOPTERA: LEPTOCERIDAE)¹

David A. Belluck², Barbara A. Pennington³, and John D. Unzicker⁴

ABSTRACT: Gravid females of the caddisfly *Triaenodes tardus* Milne were attracted to an ultraviolet light at ponds in Urbana, Illinois in the summer of 1979. During the three month study, females deposited large numbers of egg masses upon a yellow car which was reflecting light from the ultraviolet source. The authors suggest that aberrant oviposition by *T. tardus* on the automobile may be a combination of reflected light and surface texture.

Gravid females of the caddisfly *Triaenodes tardus* Banks were attracted by an ultraviolet light and captured within 90 minutes of the onset of dusk from 3 June through 31 August 1979 at ponds in Urbana, Illinois. The ultraviolet light (Wards blacklight insect trap with an 8-watt bulb) was positioned .6 m above ground level directly in front of a yellow sheet draped over a yellow car, approximately 10 m from the nearest pond.

Eggs within females were visible clearly through the abdominal wall. Many had doughnut-shaped egg masses partially extruded from the posterior end of their abdomens. Within a few minutes of alighting upon a "suitable surface," (in this case an automobile) a female would release and cement an egg mass to the substrate. Females with protruding egg masses oviposited almost immediately after landing. Normally, female caddisflies oviposit close to or directly upon the surface of the water or underwater, thus placing their egg masses near or in suitable larval habitat.

Aberrant oviposition occurred most frequently when *T. tardus* was exposed to ultraviolet light. Surfaces in the area upon which *T. tardus* were copulating (including the walls of a building located approximately 20 m from the nearest pond) bore only a few egg masses if there was no ultraviolet light, whereas great numbers of egg masses occurred upon the body of the yellow car in the presence of an ultraviolet light.

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²Department of Entomology, University of Illinois and Illinois Natural History Survey, Urbana, Illinois 61801

³University of Illinois, Urbana, Illinois 61801

⁴Section Faunistic Surveys and Insect Identification, Illinois Natural History Survey, Urbana, Illinois 61801

Although some caddisfly egg masses can withstand comparatively long periods of exposure to the atmosphere (Wiggins 1973), our observations indicate that *T. tardus* egg masses become desiccated within 10 to 15 min. after oviposition. Thus, aberrant oviposition of *T. tardus* egg masses leads to certain death for the developing embryos. We believe that the attraction of the gravid female of *T. tardus* to the automobile for oviposition might be a combination of reflected light and surface texture. During the 3 mo. period this study was conducted, no female oviposited upon the yellow sheet placed on the car, although the sheet was reflecting light from the same ultraviolet source.

Observations of insects attracted to objects with reflective surfaces during the day have been reported frequently in the literature. Kennedy (1938), Neville (1960), and Neck (1976) reported female dragonflies [*Anax junius* (Drury), *Pantala flavescens* (Fabricius), and *Belonia croceipennis* (Selys) (as *Libellula*), respectively] being attracted to reflective automobile surfaces such as the windshield or roof. Schaefer and Schaefer (1979) reported corixids (*Hesperocorixa laevigata* (Uhler)) attracted to a blue automobile roof. Fattig (1932) described several thousand corixids (*Hesperocorixa nitida* Fieber) descending upon the bright roof of a new automobile. In a personal communication to Schaefer and Schaefer (1979), R. Pupedis told of several species of mayflies swarming over automobile roofs in Connecticut.

Last (1976) and Benham (1976) noted that the hydrophilid beetle *Helophorus brevipalpis* Bedel was attracted to automobile roofs. Riegel (1963) reported the dytiscid beetle *Laccophilus fasciatus* Aubé attracted to storm windows placed horizontally. Leech (1938) observed *Agabus verisimilis* Brown as well as certain other genera of Dytiscidae and some Hydrophilidae landing on the shining surface of a car or the freshly painted roof of a house. Leng (1913) also noted that Dytiscidae have been reported being attracted to glass on a greenhouse.

Data from the literature suggest that aquatic insects commonly mistake the highly reflective surfaces of objects, such as automobiles, for aquatic habitats. Our observations demonstrate that ultraviolet light reflected from an automobile surface at night is sufficient to cause aberrant oviposition by *T. tardus*.

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REFERENCES CITED

- Benham, B.R. 1976. Swarming of *Helophorus brevipalpis* Bedel (Col., Hydrophilidae) in North Devon. Entomol. Mon. Mag. 111:127-128.
- Fattig, P.W. 1932. Water-boatman try to land on auto top (Hemipt: Corixidae). Entomol. News 44:152.

- Kennedy, C.H. 1938. The present status of work on the ecology of aquatic insects as shown by the work on the Odonata. Ohio J. Sci. 38:267-276.
- Last, H. 1976. Swarming of *Helophorus brevipalpis* Bedel (Col., Hydrophilidae). Entomol. Mon. Mag. 111:127-128.
- Leech, H.B. 1938. A study of the Pacific Coast species of *Agabus* Leach, with a key to the Nearctic species (Coleoptera: Dytiscidae). Unpubl. M. S. Thesis, Univ. California, Berkeley. 98 pp. + 8 pls.
- Leng, C.W. 1913. Aquatic Coleoptera. J. New York Entomol. Soc. 21:32-42.
- Neck, R.W. 1976. Aberrant reproductive behavior patterns of dragonflies in human-impacted habitats (Odonata: Libellulidae). Entomol. News. 87:181-183.
- Neville, A.C. 1960. A list of Odonata from Ghana, with notes on their mating, flight, and resting sites. Proc. R. Entomol. Soc. London A35:124-128.
- Riegel, G.T. 1963. Confused water beetles (Coleoptera: Dytiscidae). Coleopt. Bull. 17:64.
- Schaefer, C.W. and M.I. Schaefer. 1976. Corixids (Hemiptera: Heteroptera) attracted to automobile roof. Ent. News 90:230.
- Wiggins, G.B. 1973. A contribution to the biology of caddisflies (Trichoptera) in temporary pools. Life Sci. Contrib. Royal Ontario Mus. No. 88:1-28.
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1. Fields of training: Any of the disciplines of Agricultural Science in the broad sense or any of the related disciplines.
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